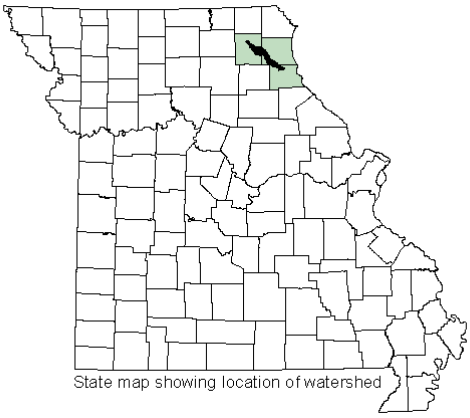
Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Troublesome Creek

Waterbody Segment at a Glance:

County: Marion
Nearby Cities: Hester
Length of impairment: 3.5 miles
Pollutant: Manganese
Source: Natural


State map showing location of watershed

Note: Troublesome Creek is also listed for Sediment; see Sediment Information Sheet.

TMDL Priority Ranking: Low

Description of the Problem

Beneficial uses of Troublesome Creek

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Protection of Human Health associated with Fish Consumption
- Drinking Water Supply

Use that is impaired

- Protection of Warm Water Aquatic Life

Standards that apply

Missouri Water Quality Standards in 10 CSR 20-7.031 Table A give 50 µg/L (micrograms per liter or parts per billion) as the maximum amount of manganese allowed for Drinking Water Supplies. This is an aesthetic standard that seeks to protect a water supply against possible taste, odor and laundry staining problems caused by excessive amounts of manganese. Exceedence of this standard is not a threat to human health.

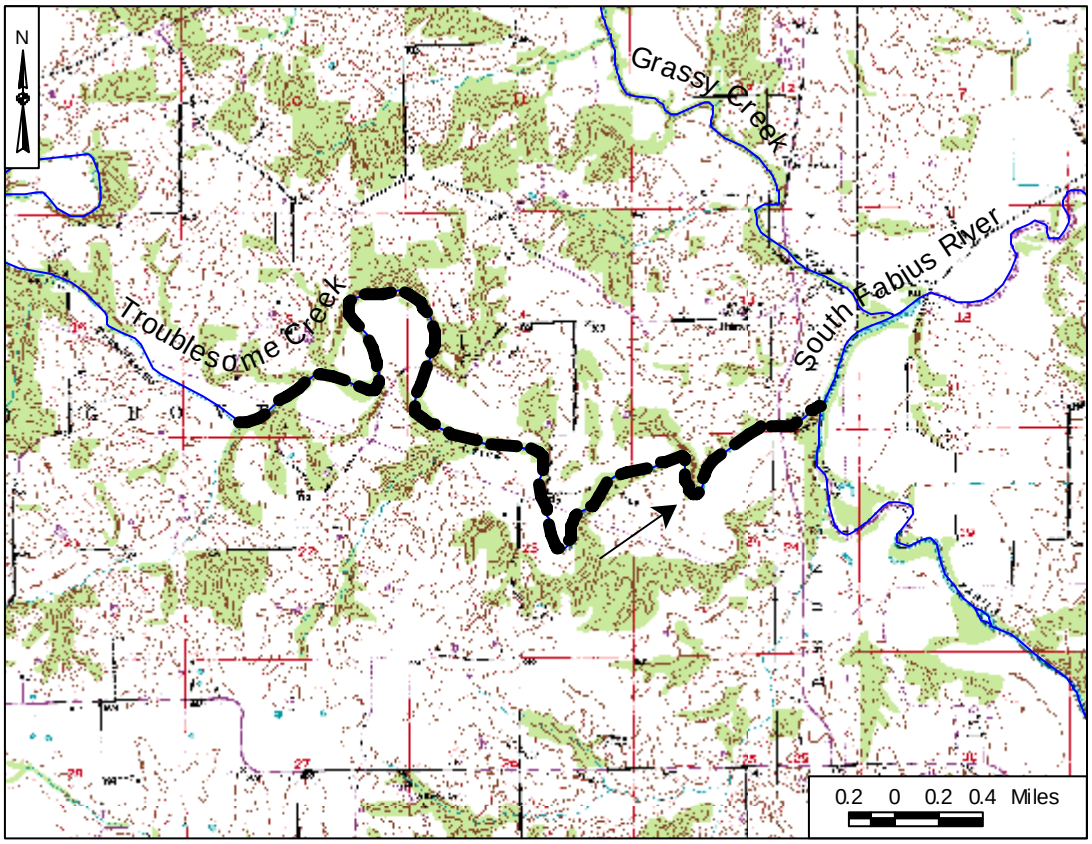
Background Information

There has yet to be any monitoring of Troublesome Creek for dissolved manganese. Monitoring of other north Missouri streams (see information sheets for Salt River, North Fabius River, Middle Fabius River and Fox River) show levels of dissolved manganese exceed state standards. Based on this data, Troublesome Creek is believed also to have elevated levels of dissolved manganese. There are no known significant man-made sources of manganese in this watershed. The source of

the manganese is believed to be natural weathering and erosion of earth materials (soils and subsoils) in this watershed.

Manganese does not present any human health hazards, but is responsible for offensive tastes and appearances in drinking water. It can react with tannins in coffee, tea and in other beverages, producing a black sludge, which affects both taste and appearance. Manganese causes a brownish-black staining of laundry, porcelain, dishes, utensils and glassware. Soaps and detergents do not remove the stains, and use of chlorine bleach can intensify the stains. Manganese can build up in pipelines, pressure tanks, water heaters and water softeners and cause equipment problems and energy cost increases due to mineral deposits.

Impaired Segment of Troublesome Creek in Marion County, Missouri



For more information call or write:
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